

Notice of Allowability

Application No.

09/913,613

Examiner

William K Cheung

Applicant(s)

VORTKORT ET AL.

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment (0331).
2. ☒ The allowed claim(s) is/are 22-38.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. In view of amendment filed March 31, 2004, claim 21 has been cancelled. Claims 22-38 are pending.
2. In view of amendment filed March 31, 2004, the rejection of claims 21, 22, 24-27 under 35 U.S.C. 103(a) as being unpatentable over Ouhadi et al. (US 5,843,577) is withdrawn. Further, the objection of claims 32-33 is withdrawn.

Allowances

3. Claims 22-38 are allowed.
4. The following is an examiner's statement of reasons for allowance:

As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the closest prior art of Ouhadi et al. (US 5,843,577) to render the present invention anticipated or obvious to one of ordinary skill in the art.

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The invention of claims 22-27, 32-33 relates to a **thermoplastic vulcanizate** of four components (A, B, C, D), comprising

- a **thermoplastic synthetic resin (A)**;
- a substantially **non-cross-linked polyethylene (B)**;
- a **rubber (C)** having a degree of **cross-linking of > 90%**; and
- a **plasticizer (D)**;

as well as of **standard blend ingredients (E)** comprising at least one **cross-linking agent or cross-linking system**, whereby a mixture is comprised of the following quantitative proportions (in % by weight) based on the sum of the four components (A, B, C, D):

thermoplastic synthetic resin (A)	5 to 20 wt%
polyethylene (B)	25 to 5 wt%
rubber (C)	30 to 50 wt%
plasticizer (D)	50 to 25 wt%

wherein the **thermoplastic synthetic resin (A)** is a **propylene based** on a homopolymer, block polymer or copolymer in conjunction with high crystallinity.

The invention of claims 28-31, 34-38 relates to a method for making a **thermoplastic vulcanizate** comprises of four components (A, B, C, D), notably

- a **thermoplastic synthetic resin (A)**;

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- a substantially non-cross-linked polyethylene (B);
- a rubber (C) having a degree of cross-linking of $> 90\%$ and being compatible with the thermoplastic synthetic resin (A) in regard to the phase inversion; and
- a plasticizer (D);

as well as of the **standard blend ingredients (E)** comprising **at least one cross-linking agent or cross-linking system**, whereby **the mixture is comprised of the following quantitative proportions (in % by weight) based on the sum of the four components (A, B, C, D):**

Thermoplastic synthetic resin (A)	5 to 20 wt%
Polyethylene (B)	25 to 5
Rubber (C)	30 to 50 wt%
Plasticizer (D)	50 to 25 wt%

wherein the rubber (C) in the still-uncured state is first mixed with a plasticizer (D) and the standard blend ingredients (E) in a roll or screw extender, whereby the standard blend ingredients still do not yet contain a crosslinking agent or crosslinking system.

The closest prior art Ouhadi et al. (col. 13, claims 1, 5) disclose a process for preparing a composition comprises 100 parts by weight of thermoplastic elastomer which has been fully cured which is equivalent to applicants rubber (C) (col. 13, claim

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5), and 3 to about 60 parts by weight of a modifier comprising a copolymer 10 to 90 weight percent of a functionalized polyolefin with about 90 to 10 weight percent of a polyamide which can be view as applicants "thermoplastic synthetic resin (A).

However, regarding claim 22-27, 32-33, Ouhadi et al. are silent on composition comprising a polypropylene based homopolymer, block polymer or copolymer in conjunction with high crystallinity. Therefore, it would not be apparent to one of ordinary skill in art to use the themoplastic elastomer teachings of Ouhadi et al. to obtain the "polypropylene based homopolymer" feature of the thermoplastic vulcanizate invention of claims 22-27, 32-33.

Regarding the invention of claims 28-31, 34-38, Ouhadi et al. are completely silent on a process which includes a step of adding a standard blend ingredients (E) comprising at least one cross-linking agent or cross-linking system. Therefore, it would not be apparent to one of ordinary skill in art to use the process teachings in Ouhadi et al. to obtain the process invention of claims 28-31, 34-38.

In view of the reasons set forth above, the vulcanizate composition and the process thereof of Ouhadi et al. are different from the vulcanizate composition and process as claimed. The invention of claims 22-38 is allowed.

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In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, and to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

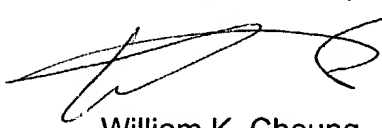
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William K. Cheung

Patent Examiner

April 14, 2004